FTA AND EQUITY: NEW APPROACHES TO GOVERNANCE

Cristiano Cagnin¹, Denis Loveridge², Ozcan Saritas³
1- DG Joint Research Centre Institute for Prospective Technological Studies, cristiano.cagnin@ec.europa.eu
2, 3- Manchester Institute of Innovation Research denis.loveridge@manchester.ac.uk, ozcan.saritas@manchester.ac.uk

Keywords: Future-oriented Technology Analyses (FTA), governance, socio-cultural evolution, corporate industrial activity and government interests, stakeholder approach, Corporate Social Responsibility (CSR)

Abstract

FTA and Equity addresses the need for multiple stakeholders' participation on public policy and corporate decision making and in their implementation processes, thus leading to more democratic societies. The need for more participative and inclusive decision making is due to the move from a technocratic nature of decision making towards more democratic processes, which is a result of the transformation of societies and situations as a result of various factors including globalisation, environmental concerns, a more knowledge intensive work and lifestyle. This transformation and the need for new policy making styles are captured in the concept of governance.

The current paper addresses Future-oriented Technology Analyses (FTA) in the context of better understanding issues that ought to be considered by the FTA community so that its application can support the quest for new forms of governance. The paper has been structured on the discussion of governance around three pillars: socio-cultural evolution, corporate industrial activity and government.

Social-cultural evolution has led to the rise of the stakeholders' approach. It has had a major root the social response to the concept of sustainable development, which followed the questioning of science and technology's role in human development from end of World War II until the realisation of the limitations of Earth's natural resources.

A critical cross-connecting theme regarding democracy and participation in shaping corporate decisions is captured in the concept of corporate social responsibility (CSR). CSR is the effort corporations make above and beyond regulation to balance the needs of stakeholders with the need to make profit.

Corporate governance is then about strategic management of CSR. It integrates value chain social impacts and investments in competitive context, with the means developed by a firm to build a proper dialogue with stakeholders. In this way there is a real understanding of what needs are being or will be met and reasons why, thus meeting the eight criteria of good governance.

Analysis of the relationship between governance and each of the three pillars mentioned above, poses a number of questions to the FTA community so that it can reflect on the potential impacts of FTA activities in governance. Setting a new landscape for the FTA, the paper concludes with those issues in which the FTA community is starting to devote attention to as well as those it still ought to consider.

The discussion is underlain by a pictorial metaphor of the situation of FTA, equity and governance: this is described in the Appendix section.
1 Introduction

The current paper addresses Future-oriented Technology Analyses (FTA) in the context of understanding the issues that need to be considered so that its application can support the quest for new forms of governance which include not only governments, but also wider society and corporate activities.

There has been a great deal of emphasis on the development and use of FTA in the public sector and by governments. Attention has also been directed to the substantial growth in foresight and FTA in business. The same holds true in the debate about the differences in the design and management of FTA activities so that its impacts and effectiveness to support both public and corporate decision making is leveraged.

However, it has become apparent that the discussion of multiple stakeholders' participation on public policy and corporate decision making, and in their implementation processes aiming at more democratic societies, has received very little attention from the FTA community. All take for granted that FTA activities are basically participative, involving all stakeholders in any situation. However, the stakeholders, their perspectives, and the representative capacity of the participants involved in the process of are usually not analysed sufficiently in a systematic way. Therefore, 'genuine' (not just a smokescreen), 'inclusive' (reflecting all views within the community), and 'effective' (not just a talking shop) participation becomes a highly disputed matter in the FTA activities (Large, 2003). If the achievement of equity and governance are the ultimate aims for policy making, then a high quality of participation, which is genuine, inclusive and effective, is an essence of the FTA processes.

Setting a new landscape for the FTA activities around the governance concept, this paper aims to shed some light on the issues which ought to be addressed by the FTA community with the aim of supporting new forms of governance. Therefore the paper is structured around three pillars: (i) socio-cultural evolution, (ii) corporate industrial activity, and (iii) government interests.

A short overview of the historical development of matters leading to the present situation regarding governance is provided first, to set the scene for the more detailed analysis of the relationship between governance and each of three pillars mentioned above. Later a discussion is put in place so that the FTA community can reflect on how FTA activities can support the move towards more democratic societies, leading thus to a better understanding of the potential impacts of FTA in governance. The paper concludes with those issues in which the FTA community is starting to devote attention to as well as those it still ought to consider.

2 History

Governance is an outcome of the continual battle between risk and regulation. Risk is ubiquitous to all life, but in human societies it has perceptual and physical components infecting matters relating to society, science and technology, economics, ecology, politics and value/norms: hence the source of risk's ubiquity. Ulrich Beck coined the term 'the risk society' in 1986 but this was some time after the UK's Royal Society embarked, in 1981, on a series of conferences on the assessment and perception of risk. Risk and perceptions of it are closely related to fear making the proper understanding of the real physical nature of risk of prime importance to framing regulations where the politics of fear may intrude irrationally. Regulations are framed to attempt to calm the perceptions of risk and to control or (rarely) to eliminate their physical reality. It pays to remember that the world is rarely what it seems according to the public perception of the risks, real or imaginary, that it faces. Governance is then a
A heady mixture of an art as much as being based on science. In the background, but ever present in the emergence of governance, lies the question of equity: for whom and by who is governance being exercised? Here it is important to recognize the difference between equity and equality, an issue that will not be taken further here. The following short history is more concerned with the way the public’s perception of invention and innovation, with an emphasis on science and technology, has grown over an extended period of time. It leads toward a notion of an extended role for FTA in a world where new forms of governance are growing from the emergence of the combined phenomena of globalisation and glocalisation and to the need for anticipation of the future needs of governance, risk and regulation. All of this needs to be seen in the context of a slow running rearrangement of the world’s chessboard of (economic and political) power that is now reaching a peak in an eastward shift: invention and innovation, and their risks are an important part of the emerging landscape. At this point there is much force to Whitehead’s perception that ‘Science is concerned with generalities. The generalities apply, but they do not determine the course of history apart from some anchorage in fact.’

The role of FTA as it affects human and natural life then has an important, if not pivotal role to play in assuring the continuation of human rights, freedom, democracy and privacy all of which are under attack globally through risk, regulation and governance.

For many centuries advances in science and technology have influenced human development strongly. Throughout this time advances in technology migrated around the world slowly, at a pace not unlike that of ecological change. For example, the invention of paper in China goes back to the Western Han Dynasty (206BC-23AD). The paper was generally very thick, coarse and uneven in texture being made from disintegrated hemp fibers. Lun Tsai is credited with the invention, in 105 A.D, of the predecessor of modern paper and paper making, which, when it arrived in Europe, was one of the two key steps in Gutenberg’s invention, in 1450, of the printing press (the second was the invention of moveable type).

The relationship between advances in technology and human social development was established well before the notion of ‘economics’ was born as a cultural invention, rather than an objective science, during the Enlightenment, so that the latter’s claim to understand this relationship is recent and tenuous. It has become more tenuous with the passage of time despite strenuous efforts to the contrary that include Adam Smith’s theses, long-wave (Kondratieff) ‘theory’ and Schumpeterian ‘gales of creative destruction.’ More recently the pace of migration of new science and technology has increased under the influence of the invention and later innovation (or widespread use) of socio-economic communication technologies that have led to the world effectively being wired-up for communication at the velocity of light. It is only recently, from the middle of the Twentieth century, that a long, slow running unease with the assumption that all science and technology were ‘good things’ and that human plasticity, mental especially, would always adapt to them, began to be challenged vociferously.

The challenge to the conventional mantra that economic, not human, development depended on the advancement of science and technology was accompanied by a growing rejection of technological determinism. H.G. Wells and Aldous Huxley were amongst the earliest authors to challenge the conventional mantra exposing the hidden social consequences of advances, real and imagined, of science and technology though in very different ways. It fell to Soddy in the 1920s through his work on energy analysis to provide a particular form of scientific criticism of the conventional mantra, a challenge that was ‘rubbished’ as politically inspired though, in retrospect, it might have been better if more attention had been paid to his work. It was probably the use of the fission nuclear weapons to end World War II that gave added impetus to the questioning of the role of science and technology in human development. Many of the scientists involved in the Manhattan Project, including Einstein and Robert Oppenheimer, were deeply affected by its purpose and outcome. The controversy that began then has never died and has evolved into the modern form of questioning of science and technology’s...
role in human development. It was the seed for the current call for new forms of governance to cope with the role of science and technology that is now embedded in the combined phenomena of globalisation and glocalisation of business with its effect on every aspect of human societies globally and the natural world in which they embedded, and with which they must coexist.

The initial challenge to the conventional mantra relating science and technology to economic development came in the form of social protests, initially against continuing R&D on nuclear weapons. The ‘cold war’ saw a great deal of assessment of nuclear weapon technologies in work by Herman Kahn and others, in the 1950s and 1960s, on the strategies for nuclear war. Less obvious were the criticisms levelled at the evolution of nuclear power generation from 1957 onwards. By the early 1970s the clamour for governance of science and technology caused a response in the form of technology assessment and its institutionalization in the UK (the PAU) and the USA (the OTA) while there were less formal attempts to introduce the notions of social accounting cum auditing of business activity. New fora for involving the public in the governance of science and technology came in many forms from the 1970s onwards including citizen juries, consensus conferences and strenuous efforts to increase the publics’ understanding of science.

All these procedures highlighted the breadth of the cascade of situations as they have evolved over the last 40 years. Technology assessment (TA) has diverged into environmental impact analysis (EIA), strategic environmental impact analysis (SEIA) and constructive TA while other processes include energy analysis (first developed by Soddy as already noted) and life cycle analysis (LCA). These methods have to be seen in the context systems thinking of which they are all sub-sets as are the methods that accompany any future oriented technology analysis. Political confusion has never been far away as OTA and the PAU have both been disbanded under changing political regimes. Most recently, foresight studies have stormed onto the scene to become a global phenomenon.

Globalisation and its offspring glocalisation have moved centre stage and now present three pillars, corporate industrial activity, socio-cultural evolution and government interests that are important in the quest for new forms of governance relating to them. All of these, including globalisation and glocalisation themselves, have to be set against the background noise of matters that affect human societies and natural life globally: a series of diagrams are used later to illustrate some of the issues that will need to be incorporated into any future mantra of governance and the evolution of science and technology. Some features may be the inclusion of the principles of industrial ecology and its near relative ecological economics. Both of these fields have been evolving since the 1960s. Similarly, the continuing pressure for the public participation in science and technology, elsewhere called a ‘democratic deficit’; from Greenpeace; from Friends of the Earth; from the ETC Group; and from other activist groups continues unabated as ever more complex and intrusive developments in science and technology are evolving. In part these have been assuaged by the evolution of corporate social responsibility (CSR) and the Global Reporting Initiative (GRI) both of which are becoming widely adopted under voluntary procedures.

The foregoing highly abridged canter through the history of matters leading to the present situation regarding governance, and the place of science and technology within its frame, is intended only to indicate how that situation has arisen and to place FTA activity in context. It is as well to remember Wittgenstein’s claim that ‘methods pass the problem [situation] by.’
3 Governance

The shift from ‘Government’ to ‘Governance’ and to the new ‘regulatory’ state due to transformations in societies at the global and local levels explains substantial transformations in legislation, regulation and public policy (Lindblom, 1977; and Majone 1996 and 1999). The shift from technocratic decision making towards more democratic processes can be captured in the concept of governance. It explains the involvement of stakeholders in sharing responsibility for the political, economic and juridical decisions in a dialogue process with the political authorities. The governance and regulatory state concepts imply a modified description of what regulation is and how it works, where the regulatory limits of the state authority and the potential of society to influence, restrain or block public policies are recognised. It also involves the positive contributions of corporations, institutions, and associations to enhance public policy within a new normative framework, which emphasises interactive and interdependent nature of the new regulatory environment.

According to Sheng (2008), governance is the process of decision making and the process by which decisions are (or not) implemented, and its analysis focuses on the formal and informal actors involved in decision making and implementing such decisions as well as the formal and informal structures that have been set in place to arrive at and implement such decisions. The author states that good governance assures that corruption is minimised, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision making, being also responsive to the present and future needs of society. He claims that there are eight major characteristics to good governance:

1. Participation by both men and woman through freedom of association and expression on the one hand and an organised civil society on the other hand.

2. Consensus oriented which is a result from an understanding of the historical, cultural and social contexts of a given society and community. It requires mediation of the different interests in society to reach a broad consensus on what is in the best interest of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for sustainable human development and how to achieve at its objectives.

3. Accountability of governmental institutions, private sector and civil society organisations to the public or those who will be affected by decisions taken and consequent actions and to their (institutional) stakeholders. Accountability cannot be enforced without transparency and the rule of law.

4. Transparency, which means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available in easily understandable forms and media and directly accessible to all who will be affected by such decisions and their enforcement.

5. Responsiveness which means that institutions and processes try to serve all stakeholders within a reasonable timeframe.

6. Effectiveness and efficiency which means that processes and institutions produce results that meet the needs of society while making best use of the resources at their disposal through the sustainable use of natural resources and protection or conservation of the environment.

7. Equity and inclusiveness that requires that all groups, particularly the most vulnerable, have opportunities to improve or maintain their well being, which depends on ensuring that all members of a given society or community feel that they have a stake in it and do not feel excluded from mainstream.

Theme 4 (FTA AND EQUITY: NEW APPROACHES TO GOVERNANCE)
8. Follows the rule of law which requires fair legal frameworks that are enforced impartially, full protection of human rights, and an independent judiciary and an impartial incorruptible police force.

New forms of governance are based on the claims for (i) accountability; (ii) transparency; (iii) participation; and (iv) coherence; all of which aiming at a reorganisation of decision making structures and with the objective of re-conquering social legitimacy. Policy documents, such as the European Commission's White Paper on Governance (COM, 2001) reflects this need to move beyond the formal processes of government and public administration, and to promote a continuous and closer interface between the state, the economy and society. Yet, it claims, governance methods and systems have not been institutionalised on a broad and continuous basis in Europe and elsewhere.

As a counter-argument, Olsen (2002) suggests that the process of governance may not always produce a precise and stable policy outcome. One of the reasons for this is the fact that not all stakeholders have resources to involve in the policy making processes as expected. These points have been raised and discussed extensively by Ulrich (2002), and Loveridge and Street (2005). Ulrich’s (ibid.) Critical Systems Heuristics (CSH) recognises that various stakeholders in society may see situations (Loveridge, 2009) in radically different ways because different stakeholder values and behavioural characteristics lead to different boundary judgements. In this way the complexities imposed in socio-cultural systems where, for example, conflicts and unequal power distribution occur, may be taken into account. This ‘radical’ view accepts that these stakeholders may be in a conflicting or confrontational relationship with each other and may be unequal in terms of their power (Daellenbach, 2001), status and other behavioural characteristics relevant to (i) above. CSH claims to recognise existing inequalities of wealth, status, power, authority, gender, race and sexual orientation in a situation: these are all behavioural components of participants in Foresight. CSH also seeks to give a voice in the decision making process to those who suffer the consequences. Sharing those concerns, Loveridge and Street (ibid.) suggests that an inclusive Foresight may be expected to:

– Create greater public awareness and understanding of new science and future technologies
– Improve the anticipation of what are likely to be desirable uses of anticipated future technologies through public participation
– Avoid the assumption that people have infinite plasticity toward new technology
– Increase trust between policy makers, business and the general public, and consequently, reducing the number of occasions when products and services based on new technologies are rejected when they are launched or soon afterwards
– Create policy processes amenable to current and future issues with the characteristics of trans-science (Weinberg ibid.) that require direct public participation
– Help meet societal expectations of increased transparency and involvement in decision making

In order to achieve a genuine, inclusive and effective participation process, it is important to understand what is meant by the term “stakeholder”. Building upon Freeman’s (1984) definition, Saritas et al. (2007) define stakeholders as “any group of individual who can affect or is affected by the policy decisions taken” (p. 3). The new governance and stakeholder approach have had various implications on the relationships between the society, corporate industrial activities and public governance. The implications of this approach in the relationships between the society and public policy explain the shift from the government to governance. Regarding the relationships between the corporate industrial activities and society, the this new approach brought the Corporate Social Responsibility (CSR) concept onto the agenda, explaining that businesses have further responsibilities.
beyond the economic performance and have to take society’s and environment’s interests into account other than their shareholders’.

Based on the Olsen’s counter-argument, the question is now how to formulate and facilitate policy making processes by taking into account the active involvement of the society and the requirements of the new governance systems. The basic claim of this paper is that the quest for new forms of governance and the analysis of how FTA activity can support such move must therefore be set against the three pillars of corporate industrial activity, social-cultural evolution and government interests, according to the pictorial metaphor described in the Appendix.

However, the current practices of the FTA are not sophisticated enough to understand and intervene into these transformed systems with their improved structures. The current FTA does not go beyond the application of certain methods, which are rooted in technological forecasting. There is a claim that the activities carried under the FTA label are inclusive, but the ‘quality’ of such inclusion is largely arguable.

Consequently, the FTA has to transform itself too. “What can then FTA learn from this transformation?” is the main question this paper raises by describing the new governance landscape which can be represented with a triangle at the centre of the three intersecting systems in the form of a Venn diagram.

![Figure 1: The new governance landscape](image)

### 3.1 Social-cultural evolution

The increased need for a better social quality of life and for social participation in decisions which affect society’s ways of living has given rise to pressures from a number of activist groups and, as a consequence, to policies aiming to improve social cohesion.
In Europe, for example, cohesion policy is seen as the best way to foster regional development and convergence. According to Danuta Hübner (EC, 2007), “the value-added of cohesion policy goes well beyond the sheer size of the investment in the future which it supports. It empowers [...] citizens by offering them an opportunity both to have a say in their future and to contribute to the future of Europe. It encourages an integrated approach to development which improves the overall impact of sectoral policies. It promotes partnership as a key element of good governance”.

According to the government-commissioned State of the English Cities thematic reports, there are five different dimensions of social cohesion: material conditions, passive relationships, active relationships, inclusion and equality.

These dimensions are ideals that have had as a major root the social response to the concept of sustainable development, which followed the questioning of science and technology’s role in human development from end of World War II until the realisation of the limitations of the Earth’s natural resources (Meadows et al., 1972). The concept of sustainable development has been moulded throughout the last centuries1. However, the notion of sustainable development was only disseminated worldwide by the World Commission on Environment and Development at the Brundtland Report, published in 1987. Its concept means development that is capable to attend the necessities of the present generation and does not compromise the rights and the possibilities of future generations to attend their own necessities (UN, 1987).

Sustainable development can be characterized as a long term social learning process oriented by public policies, which are driven by a national plan of inter-regionalized (between regions) and intra-regionally (within regions) endogenous development. Here, sustainable development can be seen as a proposal with an ethical modernity in its horizon and not only a technical one. This implies incorporating the compromise with life everlasting or continuity in the horizon of a transforming intervention of the ‘world of needs’ (Bursztyn et al., 1999).

To achieve this goal, a base of knowledge and abilities to implement processes that are technically feasible and ethically desirable is needed. The implicit limitation in the concept of sustainable development recognises the need for technology to develop solutions that conserves the resources presently available on Earth, allowing their renovation (in the case of renewable natural resources), in the proportion of future generation needs. Therefore, this concept should be understood as the possibility of building a new era of economic development2, enabled with policies3 that keep and expand the natural resources base.

---


2 Here, the complex science or the science yet to be undertaken recovers the individual, the singular, the multiple. It recognises the impossibility of apprehending the totality and thus regains the conflict between ‘truths’ as part of the evolution of the scientific truth. It integrates the conflicts between scientific truths and accepts and recognises the doubt, the uncertainty and the mistake as constructive elements of the evolution of wisdom and, therefore, evokes the scientific truth as a paradigm based on the civilisation ethics (universal principles) inserted in the sustainability principles (Bursztyn et al., 1999).

3 According to Bursztyn et al. (1999), development policies are procedures of public policy of National States. State policies sustain the development styles and support articulation patterns of the multiple social and economic sectors with the resources available on Earth. In this context, Science and Technology (S&T) comprises the group of institutions and groups, mechanisms, instruments and activities systemically articulated that reflects specific strategies of knowledge generation and use through research, development and innovation. For sustainable development, S&T corresponds to an articulation system between an environmental rationality of the developing process and the concrete processes that defines the possible environmental integrate
Sustainability emerges, therefore, from the exhaustion crisis of the development conceptions based on the rational economic logics. Economic rationality has subjugated the social, cultural, political and environmental towards the consequences of a logical and undoubtedly economic growth, when, in reality, economic sphere activities are part of human activities and the latter are included in the dynamics of the biosphere (Bursztyn et al., 1999).

Sustainability can be simply defined as the capability of continuance of life in the long term future, whereas sustainable development would then be the process needed to move towards sustainability (SIGMA, 2001). In this direction, Bursztyn et al. (1999) consider six dimensions for sustainability as articulated systems, which integration comprises elements that interact with each other. As a consequence, the social construction of sustainable development becomes a process of managing multidimensional social conflicts embedded in six dimensions for sustainability as articulated systems: social; ecologic; economic; spatial; cultural; and institutional-political: the interdependencies among the major elements are suggested in Figure 2.

![Figure 2 Interactions between major elements](image)

The social response to sustainability together with the need to “think globally and act locally”, much emphasised by the Agenda 21 or the document consensually approved at the UN Conference on Environment and Development in 1992 (UN, 2004) by representatives of 179 countries, is, therefore, at the heart of the mentioned quest for new forms of global governance.

### 3.2 Corporate industrial activity and society

management strategies. This interaction requires that the S&T system, from which the public policy of S&T is an instrument, is sustained through paradigms that incorporate ecological potential, environmental conditions and cultural values in the organisation of productive processes.
Together with the concept of user-centred innovation – innovation seen as a process that develops within the firm but is socially shaped – there is a critical cross-connecting theme regarding democracy and participation in shaping corporate decisions: corporate social responsibility (CSR). User-centred innovation is based on the fact that users’ participation may contribute to prevent technological dead-ends, reduce dependency on vendors, and promote universal interoperable technology when innovation processes are shaped by the social environment. This is expanded through the concept of CSR which brings in wider societal concerns and values – such as human rights, ethics and corruption – into business strategy and decision making.

Although some see CSR as only philanthropy by a different name, it can be defined broadly as the efforts corporations make above and beyond regulation to balance the needs of stakeholders with the need to make profit (Doane, 2005).

From a stakeholder perspective, the concern of strategic management is to create a satisfactory balance of interests among the various stakeholders who contribute to or are affected by the firm’s actions (Freeman, 1970). Moreover, CSR is believed to deliver the greatest benefits to a company and its stakeholders when integrated with business strategy and operations (BSR, 2003). Hence, a core issue to CSR is partnership development.

According to Porter and Kramer (2006), CSR proponents have used four arguments to make their case:

- **Moral obligation or the statement that firms have a duty to be good citizens and 'do the right thing'.** It is the nature of moral obligations to be absolute mandates, however, while most corporate choices involve balancing competing values, interests and costs.

- **Sustainability** which emphasises environment and community stewardship. It appeals to enlightened self-interest, often invoking the so-called triple bottom line of economic, social, and environmental performance. Nevertheless, it offers little basis for balancing long-term objectives against the short-term costs they incur. The sustainability school raises questions about these trade-offs without offering a framework to answer them.

- **License to operate** which derives from the fact that every firm needs tacit or explicit permission from governments, communities and other stakeholders to do business. This is a more pragmatic approach that offers a concrete way for a business to identify social issues that matter to its stakeholders and make decisions about them. This approach also fosters constructive dialogue with regulators, the local community, and activists. However, although the views of stakeholders are important, these groups can never fully understand a firm's capabilities, competitive positioning, or the trade-offs it must make. Nor does the enthusiasm of a stakeholder group necessarily signify the importance of an issue, either to the company or to the world. Hence, such an approach often leads to businesses short term defensive reactions.

- **Reputation** which is used to justify CSR initiatives on the grounds that they will improve a company’s image, strengthen its brand, increase morale and even raise the value of its stock. It seeks a strategic benefit which is, however, rarely found. It often leads to high-profile cause-related marketing campaigns. The rationale behind often risks confusing public relations with social and business results.

All four schools of thought share the same weakness to Porter and Kramer (2006): they focus on the tension between business and society rather than on their interdependence. Each creates a generic

---

4 Cf. Shelton (1997); NNSR (2002), among others.
rationale that is not tied to the strategy and operations of any specific company or the places in which it operates. Consequently, none of them is sufficient to help a company to identify, prioritise, and address the social issues that matter most or the ones on which it can make the biggest impact.

In an attempt to build up the business case for CSR, research can be divided into two broad categories: theoretical and empirical studies (Salzmann et al., 2005). Theoretical studies are based on frameworks that aim to explain the nature of the relationship between financial performance and environmental and/or social performance (Salzmann et al., 2005; Steger et al., 2007). Building on the frameworks proposed by Preston and O'Bannon (1997), Salzmann et al. (2005) points out that these differ in terms of the hypothesized causal sequence and the direction of the relationship in the following way:

- Frameworks suggesting a negative link between financial and social-environmental performance.
  - Trade-off hypothesis (Friedman, 1962): firms have only one social responsibility which is to increase profits. Increase in social-environmental performance incurs costs and lead to lower financial performance.
  - Managerial opportunism hypothesis (Preston and O'Bannon, 1997): strong focus on short-term financial performance or to maximise personal compensation will lead in managers reducing expenditures on social-environmental performance.

- Frameworks suggesting a neutral link between financial and social-environmental performance.
  - Supply and demand theory of the firm (McWilliams and Siegel, 2001): companies supply a demanded and unique level of social-environmental performance to maximise their profits. In equilibrium, the level of corporate social or environmental performance will be different but profitability will be maximised and equal. Therefore, there is no link between financial and social or environmental performance.

- Frameworks suggesting a positive link between financial and social-environmental performance.
  - Social impact hypothesis (Cornell and Shapiro, 1987): meeting the needs of various stakeholders' increases financial performance since the failure to meet such needs generates market fears thus increasing a firm's risk premium and affecting financial performance.
  - Available funds hypothesis of slack resources theory (Waddock and Graves, 1997a): superior financial performance enables firms to devote more resources to social-environmental performance.
  - Positive synergy: “virtuous circle” (Waddock and Graves, 1997b): combines slack resources theory and good management, which does most things well, including social-environmental and financial performances. Good social-environmental performance is defined in terms of the stakeholder relationships considered important to the firm’s performance and not in terms of discretionary activities such as philanthropy.

Theoretical frameworks or typologies most often do not allow for non-linear relationships, which is remarkable since the nature of the relationship could change depending on performance levels. One example is the nonlinear relationship of an inverted U, which suggests there would be an optimal level of social-environmental performance. This reflects the intuitive logic that improvements in environmental or social performance pay off financially at start but have diminishing returns. (Salzmann et al., 2005; Steger et al., 2007)
Empirical studies are dominated by research in two domains (Steger et al., 2007):

- Managers’ attitudes towards corporate social responsibility and related concepts, which reveal very little about actual corporate behaviour and its economic rationale.
- Instrumental research attempting to either confirm or disprove the link between corporate social and environmental performance and financial performance, in which results are inconclusive.

Salzmann et al. (2005) agrees by stating that empirical studies follow two lines of research being either instrumental studies which aim to empirically test the relationships hypothesized in theoretical studies, or descriptive studies that are intended to examine how firms and managers approach the business case for CSR in practice.

Results of empirical studies suggest that the financial performance relationship with the social-environmental performance is complex and contingent on situational, company and plant specific factors that are difficult to detect through most analytical approaches. Furthermore, the issue of the causal sequence between financial and social-environmental performance remains unresolved. On the other hand, descriptive research suggests that managers are naturally focused on the economic dimension of CSR. Moreover, the literature reveals two shortcomings when it comes to how firms approach CSR: (i) there is a clear lack of comparative and cross-industry studies and (ii) there are even fewer studies that have explicitly concentrated on the business case for CSR as a driver of corporate sustainability management, also on a more organisational level (Salzmann et al., 2005).

The business case for sustainability is clearly sector-specific and difficult for companies to build for several reasons: limited relevance of social and environmental risks and opportunities to firms' core business; numerous and highly-fragmented stakeholder demands; and lack of basic organisational capacities to collect and process relevant data (Steger et al., 2007).

Since the 60s advocates for CSR put forward pragmatic arguments that pursuing such a route would limit regulation, as well as improving reputation and employment recruitment and retention (Davis, 1960).

However, reality is that only depending on the degree to which regulation forces companies to internalise externalities, environmental and social issues can become economically relevant for companies. But CSR is supposed to go beyond compliance with the law (requirement for firms' licenses to operate) and obviously not all externalities are internalised. For this reason stakeholders put firms’ under additional pressure to internalise more of the social and environmental externalities that they create. Nevertheless, companies must ensure their own economic survival in a competitive and volatile business environment while dealing with social and environmental issues brought to their attention by stakeholders, which seems more aligned to reality than a ’triple bottom line’ approach. Indeed, it is critical to better understand how companies can live up to the expectations of their stakeholders (Steger et al., 2007).

According to Doane (2005) CSR strategies may work under certain conditions, but they are highly vulnerable to market failures. Often there is an abyss between what is good for a company and what is good for society as a whole. To her, one of the assumptions behind CSR is that business outcomes and social objectives can be more or less aligned, or in other words that the market will ultimately balance itself. Yet there is little if any empirical evidence that the market behaves this way. While there are a number of success stories where business drivers can be aligned with social objectives, they only provide a tentative approach to improving the public good. Investments of the kind (i.e. in the environment or social causes) are unlikely to pay-off in the two to four year time horizon that public companies, through demands of the stock marked, often seem to require. Thus, CSR can hardly be expected to deliver when the short-term demands of the stock market provide disincentives for doing...
so. When shareholder interests dominate the corporate behaviour, outcomes may become even less aligned to the public good (Doane, ibid.).

Traditional regulatory models, on the other hand, would impose mandatory rules on a company to ensure that it behaves in a socially responsible manner. Regulation brings with it predictability and, in many cases, innovation, such as standards which can be continuously improved through a combination of both research and legislation (Doane, ibid.).

However, NGOs seeing little political will by governments to regulate corporate behaviour realised that perhaps more momentum could be achieved by partnering with the enemy. So, organisations that address social standards in supply chains have flourished.

In an attempt to build trust and transparency with stakeholders, and to support firms in measuring individual progress towards sustainable development as well as evolution in comparison to other companies, the GRI Sustainability Reporting Guidelines was designed bringing forward performance indicators (both quantitative and qualitative), which measures the impact or effect of the reporting organisation. These are grouped in terms of the three dimensions of the conventional definition of sustainability (triple bottom line), and has lately come together with the UN Global Compact Initiative (UNGCI) to offer a more robust framework, the GRI G3 guidelines\(^5\), which has become mainstream. The UNGCI, launched by the United Nations in 2000 in partnership with business, offers nine principles relating to human rights and the environment which have become the ethical roadmap for the future.

At the same time, socially responsible investment (SRI) has become mainstream since 1999 when Dow Jones created the Dow Jones Sustainability Indexes, closely followed by the FTSE4Good (Doane, 2005). Socially responsible investment is about investors taking ethical, social and environmental criteria into account when making investment decisions. SRI plays an important part in creating corporate and public awareness about CSR issues and about the active role that the financial community can play in furthering social causes without suffering financially. It is a means to make contribution towards more responsible and sustainable business behaviour. Its selling point is that SRI funds allow investors to invest according to more ethical values, while making good financial returns. Indexes such as FTSE4Good Index\(^6\), Domini 400 Social Index and Dow Jones Sustainability Index played a crucial role in the commercial breakthrough that SRI has seen over the last decades due to the fact that they allow benchmarking between the performance of SRI and the overall market.

In this context, sovereign wealth funds have gained world-wide exposure by investing in several Wall Street financial firms including Citigroup, Morgan Stanley, and Merrill Lynch. These firms needed a cash infusion due to losses resulting from the subprime mortgage crisis. There have been attempts to distinguish funds held by sovereign entities from foreign exchange reserves held by central banks. The former can be characterized as maximizing long term return, with the latter serving short term currency stabilization and liquidity management. Some fund objectives are:

\begin{itemize}
  \item Protect and stabilize the budget and economy from excess volatility in revenues/exports.
  \item Diversify from non-renewable commodity exports.
\end{itemize}

\(5\) The GRI G3 guidelines emerged from a strategic alliance between GRI and UNGCI, to offer a framework to help companies build an internal capacity to embed the values and principles of CSR and the GRI reporting into organisational strategies and culture across their value chains.

\(6\) FTSE index date back from 1962, was first calculated worldwide in 1985 and FTSE was established as an independent company in 1995 [http://www.ftse.com/about_ftse/About_FTSE.jsp].
- Earn greater returns than on foreign exchange reserves.
- Assist monetary authorities dissipate unwanted liquidity.
- Increase savings for future generations.
- Fund social and economical development.
- Sustainable long term capital growth for target countries.
- Political strategy.

With a view to link foreign direct investments to CSR, the OECD Guidelines for Multinational Enterprises (MNEs) provide voluntary principles and standards for responsible business conduct in a variety of areas including employment and industrial relations; human rights; environment; information disclosure; competition taxation; and science and technology. Their aim is to ensure that MNEs operate in harmony with the policies of the countries where they operate. These voluntary standards cover the full range of MNEs’ operations and are a part of the Declaration on International Investment and MNEs, which constitutes a political commitment adopted by the Governments of OECD Member countries in 1976 with the objective of facilitating direct investment among OECD Members. Brazil, Argentina, Chile and the Slovak Republic (non-OECD members) have adhered to the Guidelines.

Nevertheless, the number of voluntary standards which have risen in the last decades put companies in the difficult situation of digesting these and abiding to their principles. For this reason, company reports (i.e. GRI), although a valuable source of a firm’s improved triple-bottom line performance, adds little value for stakeholders other than competitors, governments and specific NGOs.

Porter and Kramer (2006) go beyond by stating that, in reality, most common corporate response to CSR has been neither strategic nor operational but cosmetic: public relations and media campaigns, the centrepieces of which are often glossy CSR reports that offer neither a coherent framework for CSR initiatives, let alone a strategic one. Forward looking commitments to reach explicit performance targets are even rarer. They advocate that to advance CSR, therefore, it is important to look beyond community expectations to opportunities to achieve social and economic benefits simultaneously, thus reinforcing corporate strategy by advancing social conditions or, in other words, creating economic and social shared value.

According to them, strategic CSR is about choosing a unique position, principles that apply to a firm’s relationship to society as readily as to its relationship to its customers and rivals. Table 1 outlines that strategic CSR moves beyond good corporate citizenship and mitigating harmful value chain current and future impacts to mount a small number of initiatives whose social and business benefits are large and distinctive.

Strategic CSR thus involves both inside-out and outside-out dimensions, where the opportunities for shared value truly lie. Inside-out linkages are those that a company impinges upon society through its operations, which are dependent on location. Outside-in linkages are those external social conditions that influence corporations for better or for worse. Integrating inside-out and outside-in practices through pioneering value chain innovations and addressing social constraints to competitiveness are each powerful tools for creating economic and social value, but are more powerful if they work together. When value chain practices and investments in competitive context are fully integrated, CSR becomes hard to distinguish from day-to-day business of the firm (Porter and Kramer, 2006).
Table 1: A Strategic Approach to CSR

<table>
<thead>
<tr>
<th>Generic Social Impacts</th>
<th>Value Chain Social Impacts</th>
<th>Social Dimensions of Competitive Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good citizenship</td>
<td>Mitigate harm from value chain activities</td>
<td>Strategic philanthropy(^7) that leverages capabilities to improve salient areas of competitive context</td>
</tr>
<tr>
<td>Responsive CSR(^8)</td>
<td>Transform value-chain activities to benefit society while reinforcing strategy</td>
<td>Strategic CSR</td>
</tr>
</tbody>
</table>


To the authors strategic CSR also unlocks shared value by investing in social aspects of context that strengthen company competitiveness. The more closely tied a social issue is to the firm's business, the greater the opportunity to leverage the company's resources and capabilities, and benefit society. Each company can identify the particular set of societal problems that it is best equipped to help resolve and from which it can gain the greatest competitive benefit. Addressing social issues by creating shared value will lead to self-sustaining solutions that do not depend on private or government subsidies. When a well-run business applies its vast resources, expertise, and management talent to problems that it understands and in which it has a stake, it can have a greater impact on social good than any other institution or philanthropic organisation. It is through strategic CSR that the company will make the most significant social impact and reap the greatest social benefits.

Reflecting back to the broadly accepted definition of CSR, it is a concept whereby companies integrate social and environmental concerns in their business strategy and operations, and in their interaction with their stakeholders on a voluntary basis (EU, 2001; Buhmann, 2003; and Trillingsgaard and Jespersen, 2003). Hence, CSR means a continuous organisational voluntary commitment with ethical behaviours that contribute to economic, environmental and social development (Ashley, 2000a and 2000b). It assumes that businesses become partners and co-responsible for social development (Ethos, 2001), in which decisions are a result of self-reflections of its impacts over present and future quality of life of all that are affected by the company's operations (Ashley, 2000 a-b), across the value chain, and incorporate different stakeholders needs (Ethos, 2001). The assumption that CSR can be defined as business decision making linked to ethical values (Aaronson and Reeves, 2002) presupposes that stakeholders and businesses understand each other as well as which interests are being met and the reasons why.

Corporate governance is then about strategic CSR, which integrates value chain social impacts and investments in competitive context, and the means developed by a firm to build a proper dialogue with stakeholders so that there is a real understanding of what needs are being or will be met and reasons

\(^7\) Strategic philanthropy, also know as creative capitalism (Gates, 2008) or context-focused philanthropy (Porter and Kramer, 2002), is the use of philanthropy to enhance context bringing thus social and economic goals into alignment and improving a firm's long-term business prospect.

\(^8\) Responsive CSR comprises two elements (Porter and Kramer, 2006): acting as a good corporate citizen, attuned to the evolving social concerns of stakeholders, and mitigating existing or anticipating adverse effects from business activities.
why. These linkages are essential assets to be managed being thus collaboration and cooperation the elements that will allow making the shift and integrating corporate social responsibility (CSR) in the heart of business strategy. Therefore, stakeholders shall have a say or at least understand the strategic decisions of a company so that the eight criteria of good governance are met: participation and inclusiveness, understanding of all points of view (consensus-oriented), responsiveness which is related to effectiveness and efficiency, and accountability which is linked to transparency and the rule of law.

3.3 Government interests: society and corporate activity

A central assumption behind the innovation systems theory is that knowledge provides the most fundamental resource in the modern economy and that, as a result, learning is the most important process. It is also assumed that learning is interactive and, therefore, a socially embedded process that cannot be understood without taking into consideration its institutional and cultural context. Yet, though acknowledging the context-bounded nature of technical change and the relevance of the institutional set-up, this trendy approach to the study of innovation do not question the centrality of technology in society. Innovation systems theory is concerned, most of all, with the performance of the system in an economic, market-oriented perspective. Therefore it focuses on the conditions in which the system may operate more efficiently, not necessarily more equitably or democratically.

However, factors such as public awareness of industrial and technological risk, growing instances of social resistance to new technologies, and claims for novel forms of public involvement and for democratisation of knowledge raised the need to look at how perceptions and values brought about by the so-called risk society are shaping innovation processes. Hence it is important to be clear if there is a need for and acceptability of emerging technologies to be subject to social scrutiny. At the same time, whereas technological innovation originates within firms and is protected, to a great extent, by rules of secrecy and intellectual property, it is clear that novel modes of governance presuppose the transparency and openness of decision making procedures to other stakeholders and also acknowledge the relevance of kinds of knowledge other than science, such as experimental, ethical and social knowledge.

The foregoing are shown in uppermost layer of the pictorial metaphor (see Appendix) and illustrate how FTA is embedded in the background to the influences globalisation and glocalisation have on the three pillars of corporate and industrial activity, socio-cultural evolution and government’s interests, creating the need for new forms of governance. There is no doubt that innovations in international relations and regulations are embedded in globalisation and glocalisation. Similarly, innovations in international agreements on trade, standards of all kinds, intellectual property rights, environmental matters, health and safety and human rights are all involved, often interactively, in the emergence of new forms of governance as globalisation and glocalisation develop. The ‘joker in the pack is international conflict and informal war or ‘terrorism’ as these can have significant influences on the evolution of globalisation and glocalisation. Ultimately any government’s interests lie in the ‘nuts and bolts’ of policy that involve the synthesis of possibilities from the two lower boxes in Figure A 3 (i.e. Appendix).

In this entire context, standardisation in regulation is one of the fundamental concepts of governance. Standards were traditionally set by public bodies. However, more recently, industry and retailers in some countries have taken independent initiatives to develop standards and health related schemes. These activities are aimed at the enhancement of consumer trust and brand value, and at avoiding
litigation claims through the involvement of the society in setting the standards. This kind of ‘private’ regulation is named ‘self-regulation’ and has become part of the standardisation and regulation process in a number of areas including food safety and environmental standards. The breadth and influence of those attempts have gone beyond national borders and initiatives at the global level have been taken.

Similar processes have been organised to deal with the ethical, legal and social aspects of various scientific and technological areas (e.g. nanotechnologies).

4 Discussion: FTA in support of new forms of governance

Governance methods and systems have not been institutionalised on a broad and continuous basis possibly because participation seems to be guided mostly by social legitimacy, rather than by a genuine desire to involve the public into decision making. Hence, it is important to reflect on how FTA methods and processes could support a move towards genuine governance and thus a more democratic society.

The headline message from the 2006 World Economic Forum at Davos was that we are shifting from a world increasingly characterised by resource constraints to one which, in addition is increasingly driven by radical disruption of markets, societies and ecosystems. Firms will need therefore to focus on themes like creativity, breakthrough innovation, entrepreneurial solutions to great challenges like pandemics and climate change, and rapid scaling and replication of successful solutions beyond addressing global inequalities and cultural and religious divides. Dignity, equity and peace together with globalisation, world trade, Africa and climate change were the highlights in the 2007 Annual Meeting. On the same theme The World Economic Forum Annual Meeting 2008 opened with calls from the Co-Chairs to exercise “The Power of Collaborative Innovation” to meet the top challenges of economic instability, climate change and equitable growth.

One may argue that citizens who are given the opportunity to be informed effectively; to understand and to have a say on new technological choices in appropriate settings, may be ready and willing to exert their own right in decision making processes and at the same time contribute to firms and public decision making. But what would be then the role of government and industry in developing human capacity and enabling the literacy of citizens at large? This question is especially relevant as globalisation must offer opportunities for all. In fact, the latter poses a number of questions which need to be addressed such as how do FTA methods and processes address the complex issue of literacy asymmetries of different stakeholders? How can FTA strategies and methods make sure that the visions of different stakeholders can be harmonised and represented in the final outcomes and products? How far would public and private leadership literacy as well as building citizens’ capacity in FTA methods and processes lead to more participation in overall decision making?

4.1 FTA for public decision making

The innovation systems approach focuses on the performance of the innovation processes in an economic, market-oriented perspective and disregards the importance of values, ethical and social factors. However, actors affected by innovation processes ought to be more involved in technological development, so that their needs are taken into account. Therefore it is critical to reflect on how does
FTA methods and process contribute to governance modes that are more responsive to risk society perceptions, values and apprehensions.

Questions which need to be considered include what kinds of governance means are being devised to permit actors external to the innovation processes to become more actively involved in technological development, and by the same token to enable their needs and requirements to be taken into account, in functional, as well as in social and ethical terms? In other words, are conventional technocratic modes of regulation yielding to governance modes that are more responsive to risk society perceptions, values and apprehensions? Above all, how do FTA methods and process contribute to such governance modes?

The conditions for truly democratic governance of technology and innovation need to be acknowledged and discussed. Rather than just opening dialogue between science and society solely in terms of environmental or health impacts for example, there is a need to tackle broader social concerns such as ethical and cultural values, power relations, and the role of experimental or local knowledge. Thus issues underlying social reaction to new technologies and the undisclosed ways in which industries take decisions must be resolved.

More openness and participation may further the social legitimacy of procedures at stake. So how does the practical reality of participation of social and economic agents, and civil society at large, in the new institutions and procedures look like? At the same time, which FTA methods and processes could contribute to enlarge societal participation in development strategies (at local, regional, national and international levels)?

4.2 FTA for corporate decision making

The challenges faced by corporations reflect the structural changes taking place in the economy and society. A new global setting of the world economy is defining the framework for operation of the industrial sector both inside the national boundaries and internationally. In this context, corporations have used FTA to detect and prepare responses to challenges which have arisen due to:

1. Rapid and accelerating technological progress in pervasive fields such as microelectronics, ICTs, biotechnology, new materials, fuel cells and nanotechnologies.
2. Increased financial, trade and investment flows.
3. New business models for the design, production, distribution, retail and management of products and services.
4. Responses to the challenge of sustainability and changes in demography, in consumer behaviours and in social values, which brought the CSR concept higher on the agenda.

CSR is about bringing wider societal concerns into business strategy and decision making. Companies and other organisations create value in multiple dimensions. In business this is summarised as the triple bottom line or the creation of shared value through reconciling economic, environmental and social values and performance. Values such as ethics, human rights, how to deal with bribery and corruption, climate change and other societal concerns should be dealt with in a transparent and participative way. Nevertheless, it is responsibility of the board to take forward such an approach in a strategic way and to define the appropriate balance between shareholders and other stakeholders taking into consideration social impacts and social dimensions of its value chain in a competitive context as well as its relationships with employees, customers, governments and society.
at large. It is then critical to understand how FTA processes and methods can help corporate leadership in creating balanced value across and beyond a firm's value chain building upon strategic CSR.

According to Porter and Kramer (2006), strategy is always about making choices, and success in CSR is no different. It is about choosing which social issues to focus on. The short-term performance pressures companies face rule out indiscriminate investments in social value creation. It suggests, instead, that creating shared value should be viewed like R&D, as long-term investment in a firm's future competitiveness. However, the authors state that the money already invested in CSR and corporate philanthropy would generate far more benefit to both business and society if consistently invested in social initiatives which were in concert with their core strategies. It then becomes critical to understand how FTA practices can support the need to choose which social issues to strategically pursue on a participative, consensus-oriented and inclusive way which is responsive and accountable to all stockholders and the legal frameworks in place, therefore being effective, efficient, and transparent.

Corporate governance codes and shareholder expectations have increased the need for boards of directors to demonstrate effective leadership, quality decision making processes and the ability to exert corporate controls. This also raises the need for board evaluation measures against corporate and societal objectives as well as on the effect of stakeholders' communication and participation on management, transparency, performance (economic, environmental and social), and corporate identity. Value chain and competitive context investments in CSR need to be incorporated into firms' performance measures and reporting. Hence it is also paramount to reflect on how can FTA processes and methods help companies to evaluate CSR and, most importantly, the social impacts of all firm unit's activities in each location is operates. Most challenging, however, is to understand how FTA can support companies in anticipating impacts which are not yet well recognised and to report these in a transparent and responsive manner, which goes far beyond current practices of reporting which, even if based on the widespread GRI G3 guidelines, still does not offer a coherent framework for strategic CSR initiatives.

Integrating business and social needs takes more than good intentions and strong leadership: it requires adjustments in organisation, reporting relationships, and incentives. To Porter and Kramer (2006), few companies have engaged operating management in processes that identify and prioritise social issues based on their salience to business operations and their importance to the company's competitive context. Even fewer have unified their philanthropy with the management of their CSR efforts, much less sought to embed a social dimension into their core value proposition. Doing these things requires a far different approach to both CSR and philanthropy than the one prevalent nowadays. Companies need to shift from a fragmented, defensive posture to an integrated, affirmative approach. The focus needs to move away from an emphasis on image to an emphasis on substance, and one of the main challenges for the FTA community is to support such a shift by embedding forward-looking participatory practices into strategic decision making.

5 Conclusions: A new role for FTA

The new role this paper suggests for FTA brings with it the above mentioned issues and considerations that are emerging in the landscape of governance due to changes and transformations in society. Any new mantra for FTA needs to recognise the obsolescence of the conventional mantra of invention and innovation as primary supports to ‘growth’ economics. The conventional economic
mantra has persisted far beyond its 'sell by' date, a point made forcefully at least as early as 1972 in the publication of the "Limits to Growth". The shift towards a new mantra based on ecological (dynamic stable state) economics began at least as early as 1968 when Daly published the first of his papers. The parallel emergence of the notions of industrial ecology in 1973 (Evan 1973) when Evan defined industrial ecology as 'a systematic analysis of industrial operations including factors like: technology, environment, natural resources, bio-medical aspects, institutional and legal matters as well as the socio-economic aspects.' Davitaya (1977) enlarged Evan's definition describing, by an analogy relating industrial systems to natural systems, a model for a desirable transition to cleaner production:

Nature operates without any waste products. What is rejected by some organisms provides food for others. The organisation of industry on this principle—with the waste products of some branches of industry providing raw material for others—means in effect using natural processes as a model, for in them the resolution of all arising contradictions is the motive force of progress (Wikipedia's 'History of Industrial Ecology')

Industrial ecology was later popularised by Frosch & Gallopoulos (1989). It is suggested that the marriage of the principles of industrial ecology and those of ecological economics, and its influence on globalisation, globalisation and governance, for which there is evidence in recent EU moves towards requirements for 100% recyclability, should be part of any new mantra for FTA. Throughout it should be remembered that invention and scientific breakthrough are pseudo-random, if not totally random events in time and nature. In contrast innovation is the creation of the widespread use of an artefact, a social process in the widest sense, which depends on an organizations willingness to invest in the face of real and anticipated risks and regulations embodied in governance

The move towards a new mantra for FTA is shyly and slowly being shaped since, at least, the Second International Seville Conference on Future-Oriented Technology Analysis which took place on September 2006. The greater acknowledgement of the co-evolution of technology and society as well as the claim that FTA practices should be submitted to interpretation of their significance by the relevant disciplines of the social sciences and humanities (SSH) have been pivotal in this move since it lead to the understanding that FTA activities and its umbrella communities should adopt necessarily more complex perspectives. Long term and systemic analysis constitutes key characteristics of FTA, which explicitly deals with complex socio-technical systems and science-society relationships. FTA is also an agenda-setting process aimed at providing anticipatory intelligence as basis for decision making. At the same time, it allows for the construction of common visions and produces issue-specific knowledge through a process of dialogue, creating joint learning spaces between uses and producers of innovation, knowledge generation and shared sense of commitment. Not surprisingly, FTA has relevance in all human activities where there are collective stakes (Cagnin et al., 2008).

In the 2006 FTA Conference, the FTA community realised the need to address the imperative of improving the two-way linkage between knowledge and the building of a 'common world'. To do so a vivid debate took place in trying to grasp the community's readiness to address global issues and to building governance at a global level. Many ideas were debated, but these remain to be operationalised. Hence, the ability of the FTA community to garner sufficient credibility, legitimacy and authority to contribute to such global agendas is still a concern. At the same time, the contribution and intervention of FTA on global issues still needs to be better conceptualised to enable the community to take action. The discussions which took place in the 2006 FTA Conference focused upon (Cagnin et al., 2008):

- Building capacity in the FTA community.
- Building community links.

Theme 4 (FTA AND EQUITY: NEW APPROACHES TO GOVERNANCE)
– Raising awareness among potential users.
– Understanding the community's preparedness to address global problems.
– Evaluating, monitoring and quality control of FTA activities.

To sum up, the way to move forward may be for FTA to recognise that it can play an important role in a complex world in which globalisation, glocalisation and governance are critical elements. The current paper goes beyond the issues already outlined by Cagnin et al. (2008) by indicating that the time has come for the FTA community to go beyond the current major focus of indentifying and/or recommending priorities, mainly for RTDI policies and strategies, toward that of embedding forward-looking participatory practices in overall processes of strategic policy and decision making. Being able to respond to the questions posed in section 4 of this paper is critical to making such a shift. By engaging actively in shaping the move from the current paradigm of 'growth' economics to that of ecological economics and industrial ecology, as highlighted above, FTA can fulfil its role of supporting actors in society in shaping a common future based on a shared vision among all concerned.

References


Ashley, P. A. (2000a), Gestão ecocêntrica e consumo responsáveis: desafios para a responsabilidade social corporativa.

Ashley, P. A. (2000b), Responsabilidade social corporativa e cidadania empresarial: uma análise conceitual comparativa, ENANPAD.


Cagnin et al. (Eds.) Future-Oriented Technology Analysis: strategic intelligence for an innovative economy. Springer.


Doane, D. (2005) The myth of CSR: the problem with assuming that companies can do well while also doing good is that markets don't really work that way. Stanford Social Innovation Review.


EU (2001), Green paper: promoting a European framework for corporate social responsibility, Brussels: Commission of the European Communities.

Evan, H.Z. 1973 Seminar at Economic Commission of Europe, Warsaw


Kahn, H, Brown, W & Martel, L 1976 ‘The next 200 years,’ Associated Business Programs

Kahn, H. 1962 ‘Thinking about the unthinkable,’ Weidenfeld and Nicholson


Soddy, F. 1922 ‘Cartesian economics: the bearing of physical science on state stewardship,’ Hendersons

Soddy, F. 1926 ‘Wealth, virtual wealth and debt,’ George Allen and Unwin


Appendix

The following diagrams set out the metaphor that underlies the discussion in the text. The stages in the evolution of the metaphor are shown in the first two diagrams: the entire metaphor is illustrated in the final diagram.

Figure A.1 The three pillars

The first layer of the metaphor contains three pillars, P1 (Corporate/industrial activity), P2 (Government interests) and P3 (Socio-cultural evolution).
The second layer imposes the background of factors that influence human life and ways of living and within which the three pillars are embedded.
The top layer completes the metaphor illustrating the interdependencies that flow from the prime forces in the situation, globalisation and glocalisation.